

1 **WHAT IS CLAIMED IS:**

2 1. A portable UV detector with simple operation comprising:
3 a cylindrical main body with a hollow core running through both ends;
4 a filtering lens mounted on one end of the main body and a screw plug on the
5 other end of the main body,
6 wherein an enclosure behind the screw plug is a battery chamber and a display
7 panel window is formed on an external wall of the main body;
8 an output conversion circuit on a printed circuit board for converting the light
9 intensity measured to the corresponding UV radiation level, whose input terminal is
10 connected to a light detector located underneath the filtering lens, and the output
11 terminal of the output conversion circuit is connected to a display module mounted in the
12 display panel window of the main body; and
13 multiple batteries housed in the enclosure of the main body behind the screw plug
14 to provide the operating voltage for the output conversion circuit and light detector.

15 2. A portable UV detector with simple operation as claimed in claim 1, wherein
16 a push-button switch is mounted on the printed circuit board of the detector to control
17 activation/deactivation of the control circuit composed of a battery, an output conversion
18 circuit, a light detector and a display module.

19 3. A portable UV detector with simple operation as claimed in claim 2, wherein
20 the output conversion circuit comprises:

21 a light detection circuit composed of multiple resistors to form a voltage divider
22 circuit, so that at each voltage tapping junction a reference voltage is produced, and the
23 circuit is also connected to the light detector formed by a photo resistor;

24 a comparator circuit formed from multiple comparators, wherein the reference

1 voltage terminal of each respective comparator is respectively connected to a voltage
2 tapping junction; and the input terminal of each comparator is connected to a resistor
3 with a different resistance value; and the output terminal of each comparator is
4 respectively connected to the corresponding pin of the display module;

5 a power switch circuit connected in series to the push-button switch on the printed
6 circuit board and the battery to control the operating voltage of the light detection circuit,
7 comparator circuit and display module.

8 4. A portable UV detector with simple operation as claimed in claim 3, wherein
9 the power switch circuit is formed by a push-button switch and the battery connected in
10 series; and opposite ends of the push-button and the battery are connected in series to a
11 resistor and a Zener diode in parallel; and the junction is further connected to one of the
12 input pins of the display module to control the illumination of the fifth display segment.

13 5. A portable UV detector with simple operation as claimed in claim 1, wherein
14 the display module has a graphical display.

15 6. A portable UV detector with simple operation as claimed in claim 3, wherein
16 the display module has a graphical display.

17 7. A portable UV detector with simple operation as claimed in claim 4, wherein
18 the display module has a graphical display.

19 8. A portable UV detector with simple operation as claimed in claim 5, wherein
20 the display module has a UV level scale printed along one side.

21 9. A portable UV detector with simple operation as claimed in claim 6, wherein
22 the display module has a UV level scale printed along one side.

23 10. A portable UV detector with simple operation as claimed in claim 7, wherein
24 the display module has a UV level scale printed along one side.

1 11. A portable UV detector with simple operation as claimed in claim 1, wherein
2 the display module has a numeric display.

3 12. A portable UV detector with simple operation as claimed in claim 3, whereby
4 the display module has a numeric display.

5 13. A portable UV detector with simple operation as claimed in claim 4, wherein
6 the display module has a numeric display.

2025-03-04 15:04:00